

# Tiny and mysterious: Research sheds light on sub-Saharan Africa's seahorses, pipefish and pipehorses

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Seahorses are considered [fabled creatures](#) by many; something that only exists in old mythical tales of the ocean. But these curious animals really exist—and they're not the only members of the Syngnathidae family of

fishes. Other [syngnathids](#) are pipefish, pygmy pipehorses and seadragons, and all are enchanting.

Sadly, syngnathids all over the world are at risk. They face [major threats](#), ranging from both intentional and unintentional harvesting to habitat loss and alterations. Syngnathids are commonly found in shallow, coastal environments, which magnifies the impacts of these threats.

Syngnathids, and specifically seahorses, are the subject of various [global](#) and [regional](#) research initiatives. They are relatively well studied in many parts of the world. This is, however, not true for sub-Saharan Africa.

Most of the published research from the region has focused on the endangered Knysna seahorse (*Hippocampus capensis*) and the critically endangered estuarine pipefish (*Syngnathus watermeyeri*), both found in South Africa. Recently, a pygmy seahorse (*Hippocampus nalu*) was also discovered in Sodwana Bay, South Africa—the first ever recorded from Africa.

But South Africa is just one country on a vast continent. This prompted us to conduct a comprehensive [review](#) of the diversity, distribution, ecology and conservation status of the family Syngnathidae in sub-Saharan Africa and adjacent islands. We attempted to collate all existing information, data and observations of syngnathids in the region.

Our findings unveiled a total of 63 syngnathid [species](#) across 26 genera in the study area. Mozambique exhibited the highest species diversity, followed by Madagascar and South Africa. There were many interesting, exciting [data points](#), but it also became evident that regionally much needs to be done in terms of research and conservation action on the ground (or rather, in the water!).

## **How we did it**

It's no easy task to gather information for this kind of review, especially because there isn't a lot of published information available. As a first step, we did a deep dive to collate all peer reviewed published articles, as well as information produced outside traditional publishing and distribution channels, such as management plans and government documents.

We then turned to the African marine community, reaching out to our network of keen divers and researchers within the region. We also used various citizen science platforms such as [iSeahorse](#) and even created an [iNaturalist project](#) for all syngnathid observations in sub-Saharan Africa. On iNaturalist, people could log their observations with the location, drawing on the wider community for help with identification where needed.

The response from the marine community and observations logged on iNaturalist yielded some wonderful results. For instance, the discovery of a [new species](#) of pipehorse, currently under [peer review](#).

## What we found

Once all the data was collected and collated, some key findings emerged.

There is [limited information](#) on the biology of sub-Saharan syngnathids, making it tough to understand the [population dynamics](#), habitat use and association, and life history of species. This highlights the need for further species-specific research.

Most assessments that included information on syngnathid populations came from general fish surveys. It is very tough to find syngnathids and they tend to be sparsely distributed, so [targeted survey approaches](#) are needed to detect them.

Twenty percent of syngnathid species found in the region are listed as [data deficient on the IUCN Red List](#). One example is *Bulbonaricus brucei*, which is only known from its type specimen (the first specimen collected and used to describe the new species). There have been no published observations of this species after its initial description in 1971. This highlights the need for locally significant and current data.

Sub-Saharan syngnathids are susceptible to the same threats as species elsewhere in the world, like harvesting, poaching, impacts from by-catch and habitat loss and alteration. We concluded that different species face different types of threats based on where they are found along the seascape. Similarly, what would work in terms of conservation actions depends on the species and where it is found.

To illustrate this, we created [a schematic](#) summarizing the main threats and the most suitable conservation actions across the seascape for all syngnathids found in sub-Saharan Africa.

## More to learn

It's clear from this review that sub-Saharan Africa is home to many weird and wonderful syngnathids. We believe that many remain to be discovered. However, it is also apparent that research and conservation actions must be scaled up.

Scientists need to conduct more species-specific assessments to develop locally significant management and conservation actions. It's also crucial to untangle syngnathid diversity and taxonomy in the region for deeper understanding, combined with the development and support of local expertise.

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